

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A porous silica particle for use in zwitterionic and hydrophilic interaction high performance liquid chromatography, comprising ~~covalently bound~~ zwitterionic groups that have been grafted on the particle.
2. Canceled.
3. (Currently Amended) A silica particle according to claim 2~~1~~, wherein zwitterionic groups are polymerized to said zwitterionic groups grafted on the particle; and the number of zwitterionic groups polymerized to said zwitterionic groups grafted on the particle is greater than the number of said zwitterionic groups grafted on the particle.
4. (Original) A silica particle according to claim 1, wherein said zwitterionic groups contain polymeric chains of at least two zwitterionic monomers.
5. (Original) A silica particle according to claim 4, wherein said polymeric chains are built up of a zwitterionic monomer selected from the group consisting of 3-[N, N-dimethyl-N-(methacryloyloxyethyl)ammonium] propanesulfonate, 1-(3-sulfopropyl)-2-vinylpyridinium betaine, and 3- [N, N-dimethyl-N-(methacrylamidopropyl)ammonium] propanesulfonate.

6. (Currently Amended) A column packing material suitable for use as a stationary phase in zwitterionic and hydrophilic interaction high performance liquid chromatography, comprising the porous silica particles-particle according to claim 1.

7. Canceled.

8. (Currently Amended) A column packing material according to claim ~~7~~6, wherein zwitterionic groups are polymerized to said zwitterionic groups grafted on said porous silica ~~particles~~particle; and

the number of zwitterionic groups polymerized to said zwitterionic groups grafted on said porous silica ~~particles~~particle is greater than the number of said zwitterionic groups grafted on said porous silica ~~particles~~particle.

9. (Currently Amended) A column packing material according to claim 6, wherein said ~~covalently bound~~ zwitterionic groups comprise polymeric chains of at least two zwitterionic monomers.

10. (Original) A column packing material according to claim 9, wherein said polymeric chains are built up of a zwitterionic monomer selected from the group consisting of 3-[*N,N*-dimethyl-*N*-(methacryloyloxyethyl)ammonium] propanesulfonate, 1-(3-sulfopropyl)-2-vinylpyridinium betaine, and 3 -[*N,N*-dimethyl-*N*-(methacrylamidopropyl)ammonium] propanesulfonate.

11. (Previously Presented) A method for producing porous silica particles for zwitterionic and hydrophilic interaction high performance liquid chromatography according to claim 1, comprising:

providing porous silica particles suitable for use in zwitterionic and hydrophilic interaction high performance liquid chromatography;

reacting said silica particles with thionyl chloride, thereby obtaining activated silica particles;

reacting said activated silica particles with a tert-(C4-C10)-alkyl hydroperoxide to couple said tert-(C4-C10)-alkyl hydroperoxide to said activated silica particles, thereby obtaining peroxide-functionalized silica particles; and

adding a zwitterionic methacryloxyethyl monomer to said peroxide-functionalized silica particles, thereby initiating graft polymerization of said zwitterionic methacryloxyethyl monomer to said peroxide-functionalized silica particles, wherein the porous silica particles comprise covalently bound zwitterionic groups.

12. (Original) A method according to claim 11, wherein the zwitterionic methacryloxyethyl monomer is 3-[*N,N*-dimethyl-*N*-(methacryloyloxyethyl)ammonium] propanesulfonate.

13. (Original) A method for producing porous silica particles for zwitterionic and hydrophilic interaction high performance liquid chromatography, comprising:

providing porous silica particles suitable for use in zwitterionic and hydrophilic interaction high performance liquid chromatography;

suspending the silica particles in an aqueous solution of a zwitterionic methacryloxyethyl monomer, thereby obtaining a suspension of silica particles; allowing said suspension to equilibrate at room temperature;

heating said equilibrated suspension to a temperature at or between 40°C and 70°C; and

adding an aqueous solution of ammonium cerium nitrate, thereby initiating polymerization, wherein

the porous silica particles comprise covalently bound zwitterionic groups.

14. (Original) A method according to claim 13, wherein the zwitterionic methacryloxyethyl monomer is 3- [N, N-dimethyl-N-(methacryloyloxyethyl)ammonium] propanesulfonate.